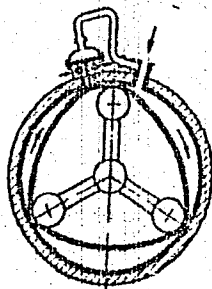


USSR

ZONDASHEV, V. S., PAK, K. S., USSR Author's Certificate No 334403

plate and separating the cavity of the box into two chambers, one of which (with the plate) is connected to the delivery pipe, while the other (opposite the first) is connected to the suction pipe,



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C. Application of Theoretical, Probability and
Statistical Methods

USSR

SOLOMATIN, V. V., PAK, M. D. and BUKANOVSKIY, A. V.

"Application of Methods of Mathematical Statistics to the Study of the
Parametric Dependence of a System on an Object of Control"

Tr. NII Upravl. Mashin i Sistem [Works of the Scientific Research
Institute for Control Machines and Systems], 1973, No 7, pp 5-11 (Trans-
lated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No
10V197)

Translation: This article is dedicated to analysis of the problem of
application of methods of mathematical statistics to the practice of
planning and improvement of control systems at industrial enterprises.
The work gives a number of equations for the dependence of parameters
of the control system on the object. Substituting the fixed values of
parameters of the object into the equations produced, the calculation
value of any parameter of the control system can be produced. The re-
sults of investigation of the parametric dependence of the system on
the control object allow a scientifically well-founded solution of the
problem of improvement of the control system and estimation of its qual-
ity to be produced.

Author's view

1/1

Therapy

USSR

UDC: 616.981.553-036.22

PAK, S. G., ANDRONNIKOV, V. A., NEKHAEVA, N. D., SHEVTSOVA, V. S., KARNOVA, S. K., and SEMENOVA, D. V., First Moscow Medical Institute imeni I. M. Sechenov and Chuvash Republic Sanitary-Epidemiological Station

"Observation of Group Infection With Type E Botulism"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 59-63

Abstract: A trend toward increased occurrence of type E botulism has been observed all over the world. In the fall of 1967, 5 of 24 persons in the Chuvash ASSR who this type of botulism from salted fish (carp) died. Fourteen of the afflicted persons were seriously ill, seven had moderately severe cases, and only three had mild cases. The incubation period was short: in 22 cases, it varied from 4 to 12 hr, in one case it was 18 hr, and in another case it lasted 7 days (a mild case). In the five fatal cases, the incubation period did not exceed 4 hr. Vaccination with antitoxin is the first therapeutic measure. Four patients of the above group were not treated with the serum and died, since botulism had not been diagnosed. Although introduction of the serum in the early stages of the disease has

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USSR

PAK, S. G., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 59-63

the most beneficial effects, the serum can be administered at any stage in which botulism has been recognized and intoxication phenomena are observed. Comprehensive treatment must cover all fundamental pathogenetic factors, including suppression of growth of the pathogen, detoxification, and changes in the biochemistry of the neuromuscular system. To this end, the remaining 19 patients of the above group were treated by gastric lavage, parenteral introduction of salt solutions, glucose, and blood substitutes; one person received blood plasma and four were treated with polyvinylpyrrolidone. Botulism must be regarded as a toxicoinfectious process; hence levomycin was administered to all 19 patients to cut down further growth of the pathogen. Adenosine triphosphoric acid and cocarboxylase were administered also.

2/2

USSR

UDC 616.988-002.151-036.21(575.3)

PAK, T. P., Dushanbe Institute of Epidemiology and Hygiene

"Experience in Zoning the Tadzhik SSR Into Epidemiological Districts of Crimean Hemorrhagic Fever"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972,
pp 112-116

Abstract: Although Crimean hemorrhagic fever (CHF) has been recorded among people only in Southern Tadzhikistan, the pathogen circulates in animals over a wider area, as indicated by diagnostic tests (diffusion precipitation in agar) performed on blood serum of 4,036 privately owned cows, sheep, donkeys, goats, and horses which are not treated for ticks and which graze in the vicinity of the farms (and not on state owned farm animals which are treated for ticks and, in the spring, are driven to highland pastures hundreds of kilometers away from winter pastures). On the basis of the results, the Tadzhik Republic has been divided into four CHF zones: 1. the endemic zone -- Southern Tadzhikistan; 2. the potentially dangerous zone -- Northern Tadzhikistan; 3. the zone of incidental infection -- Central Tadzhikistan and a part of Western Pamir; and 4. the zone free of CHF -- the major portion of Pamir.

1/1

USSR

UDC 547.574

KOZLOV, N. S., PAK, V. D., GACHKOVSKIY, V. F., and BALYKOVA, I. A., Perm' Agricultural Institute imeni D. N. Pryanishnikov, Perm', and Institute of Chemical Physics, Academy of Sciences USSR

"Synthesis and Properties of Monophenyl- and Monoalkylphosphite Ammonium Complexes of Arylidenebutylamines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2497-2500

Abstract: The reaction of arylidenebutylamines $RC_6H_4-CH=N-C_4H_9$ with diphenyl and dialkyl phosphites proceeded in one direction only, leading to the formation of monophenyl- and monoalkylphosphite ammonium complexes of azomethines $(RC_6H_4-CH=N^+-C_4H_9)O^--P(OR')(OH)$ (I; R = H, p-MeO, p-Me₂N, p-Cl, p-Br, p-NO₂; R' = Ph, Me, Et, Pr, i-Pr, Bu). The compounds I were crystalline substances with m. p. 192-233°. The spectra of their luminescence induced by radiation with a wavelength in the region of 365 nm were determined. It had been established in earlier work by Kozlov et al that the reaction of arylidene-methylamines with esters $(R'O)_2POH$ (R' = Ph or alkyl) could result in the formation of either aminophosphonic esters or of monophenyl- and monoalkylphosphite ammonium complexes of azomethines.

1/1

USSR

UDC 547.57

KOZLOV, N. S., PAK, V. D., GARTMAN, G. A., and BALYKOVA, I. A.

"The Direction of the Reaction of Arylidenemethylamines with Diphenyl and Dialkyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2360-2363

Abstract: It had been established in earlier work by Kozlov et al (Izv. AN Beloruss. SSR. Ser. Khim., No 3, 95, 1967; No 2, 199, 1968; No 2, 113, 1968) that aminophosphonic esters are the principal products of the reaction of aromatic azomethines with diphenyl and dialkyl phosphites. In this instance the reaction of arylidenemethylamines $RC_6H_4 CH=NMe$ with diphenyl and dialkyl phosphites was studied. In the majority of cases monophenyl- and monoalkyl-phosphite ammonium complexes of azomethines formed: $RC_6H_4 CH=NMe + (R'O)_2POH + H_2O \rightarrow (RC_6H_4 CH-NHMe)^+ \bar{O}P(OR')OH$ (I) + $R'OH$. In some instances, however, aminophosphonic esters formed under identical conditions from arylidenemethylamines and dialkyl phosphites: $RC_6H_4 CH=NMe + (R'O)_2POH \rightarrow RC_6H_4 CHNHMe$ (II). The dual

direction of the reaction of arylidenemethylamines can be explained by the

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USSR

KOZLOV, N. S., et al., Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2360-2363

higher basicity of arylidenemethylamines as compared with aromatic azomethines. As a result, the nucleophilic activity of the azomethines was reinforced. The properties of the compounds I and II that were synthesized are listed in tables.

2/2

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF SCHIFF BASES WITH 1,3 INDANDIONE -U-
AUTHOR--(03)--KOZLOV, N.S., PAK, V.D., NUGUMANDV, Z.Z.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 194-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SCHIFF BASE, POLYNUCLEAR HYDROCARBON, AROMATIC KETONE,
HETEROCYCLIC NITROGEN COMPOUND, AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0841 STEP NO--UR/0409/70/000/002/0194/0196
CIRC ACCESSION NO--AP0124507
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124507

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM 1,3 INDANDIONE (I) AND (M OR P SUBSTITUTED BENZAL)ANILINE OR (M OR P SUBSTITUTED BENZAL) BETA NAPHTHYLAMINES THE FOLLOWING 2 SUBSTITUTED 1,3 INDANDIONES WERE PREPD. IN ALC. OR BENZENE UNDER ELIMINATION OF ANILINE: BENZYLIDENE, M. 152-3DEGREES (YIELD 70PERCENT) FROM ANILINE DERIV.; P METHOXYBENZYLIDENE, M. 155-6DEGREES (YIELD 80PERCENT); P BROMOBENZYLIDENE, M. 169-70DEGREES (YIELD 85PERCENT); M NITROBENZYLIDENE, M. 246-8DEGREES; AND P NITROBENZYLIDENE, M. 228-30DEGREES (85PERCENT). USING BENZYLIDENE BETA NAPHTHYLAMINES SCHIFF BASES IN ETHANOL ON A WATER BATH THE PRODUCT OF THE REACTION WITH I WAS II. FACILITY: PERM. SEL'SKOKHOZ. INST. IM. PRYANISHNIKOVA, PERM, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--KINETICS AND MECHANISM OF THE REACTION OF SCHIFF BASES WITH
DIETHYLPHOSPHITE -U-
AUTHOR-(03)-KOZLOV, N.S., PAK, V.D., LEVASHOV, I.N.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 243-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--REACTION KINETICS, CHEMICAL REACTION MECHANISM, SCHIFF BASE,
ALKYL PHOSPHITE, CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1104 STEP NO--UR/0250/70/014/003/0243/0246
CIRC ACCESSION NO--AT0124759
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AT0124759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS AND MECHANISM OF THE REACTION OF SCHIFF BASES WITH (ETO)SUB3 P TO GIVE RC SUB6 H SUB4 CH(P(G)(OET)SUB2)NHC SUB6 H SUB4 R PRIME1 WAS STUDIED. THE REACTION WAS FIRST ORDER WITH RESPECT TO BOTH REACTANTS. A REACTION MECHANISM WAS PROPOSED. THE INFLUENCE OF CONCD. HCL AS A REACTION CATALYST WAS STUDIED: RESULTS SUGGESTED THAT THE CHEM. REACTIVITY OF SCHIFF BASES IS DETD. BY THEIR CONFIGURATION. FACILITY: INST. FIZ.-ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SOME PROPERTIES OF DIPHENYL N ARYLAMINOPHOSPHONIC ESTERS -U-
AUTHOR--(03)-KOZLOV, N.S., PAK, V.D., YELIN, YE.S.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIYA NAVUK BELARUSKAY SSR, VESTSI, SERYYA KHIMICHNYKH NAVUK,
1970, NR 2, PP 102-104
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, ESTERIFICATION, HYDROLYSIS,
BENZENE DERIVATIVE, POLYNUCLEAR HYDROCARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1336 STEP NO--UR/0419/70/000/002/0102/0104
CIRC ACCESSION NO--AP0136712
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE RESULTS OF THE CONTINUED STUDY OF DIPHENYL ARYLAMINOPHOSPHONATES ARE GIVEN. THE POSSIBILITY OF TRANSESTERIFICATION OF DIPHENYL ESTERS WITH ALKALI ALCOHOLATES IS DISCUSSED AND THE STABILITY OF DIALKYL ESTERS IN ALKALINE MEDIA FOLLOWED BY COMPLETE HYDROLYSIS IN ACID MEDIA IS DESCRIBED. A STUDY WAS MADE OF THE ALKALINE HYDROLYSIS OF DIPHENYL ARYLAMINOPHOSPHONATES IN AN AQUEOUS KOH SOLUTION. SUBSEQUENT ACIDIFICATION YIELDED FREE ARYLAMINOPHOSPHONIC ACIDS. THE ACIDS, RECRYSTALLIZED FROM ETHANOL; HAD MELTING POINTS HIGHER THAN THE INITIAL ESTERS. THE HYDROLYSIS REACTION OCCURRED AS FOLLOWS: THE COMPOUNDS OBTAINED BY THE ALKALINE HYDROLYSIS ARE SHOWN IN THE FOLLOWING TABLE: (TABLE SHOWN ON MICROFICHE). FACILITY: INSTITUT FIZIKO-ORGANICHESKOY KHIMII, AN BSSR; PERMSKIY SEL'SKOKHOZYAYSTVENNY-INSTITUT.

UNCLASSIFIED

USSR

UDC 547.574+241

KOZLOV, N. S., ~~PAK~~, V. D., YELIN, YE. S., Institute of Physico-Organic Chemistry, Academy of Sciences Belorussian SSR; Perm Agricultural Institute imeni D. N. Pryanishnikov, Perm, Ministry of Agriculture USSR

"Obtaining Aminophosphinic Esters and Their Acid Decomposition"

Minsk, Vestsi Akademiyi Navuk Belaruskay SSR, No 2, 1970, pp 87-90

Abstract: The esters of aminophosphinic acids were obtained by co-condensation of aromatic amines and aldehydes with dialkyl- or diphenylphosphites, and also by condensation of aromatic Schiff's bases with the above phosphites in the presence of a catalyzer, concentrated HCl or SnCl₂. They are white or yellow crystals, soluble in ether, alcohol, benzene, dioxane and acetone. Attempts to use azomethanes with ortho-substituents gave negative results.

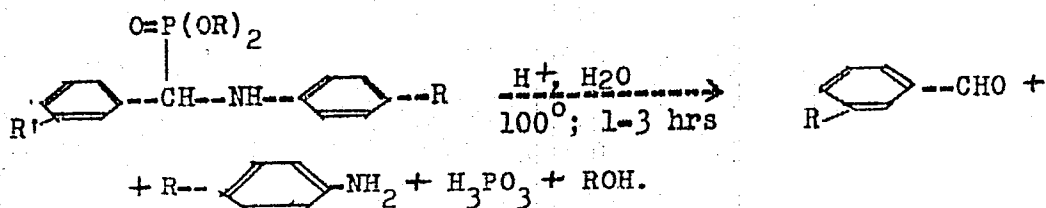
The authors prove experimentally that N-aryl substituents of the aminophosphinic acids are completely decomposed in hydrochloric and acetic acids:

1/2

- 85 -

USSR

KOZLOV, N. S., et al, Vestsi Akademiiy Navuk Belaruskay SSR, No 2, 1970, pp 87-90



Electropositive substituents in the benzene ring (CH_3 , OCH_3 , $i\text{-C}_3\text{H}_7$), as a rule, accelerate decomposition; electronegative substituents (NO_2 , Cl , I) slow the reaction by interfering with the transfer of H^+ to the electrophilic N nucleus.

2/2

JSSR

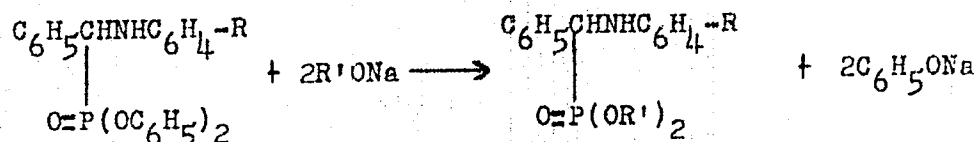
UDC 547.574 + 241

KOZLOV, N. S., PAK, V. D., YELIN, YE. S., Institute of Physico-Organic Chemistry, Academy of Sciences Belorussian SSR; Perm Agricultural Institute imeni D. N. Pryanishnikov, Perm, Ministry of Agriculture USSR

"Some Properties of Diphenyl Esters of N-aryl Substituted Amino-phosphinic Acids"

Minsk, Vestsi Akademiyi Navuk BSSR, No 2, 1970, pp 102-104

Abstract: Failing to achieve transesterification of diphenyl esters by aliphatic alcohols, the authors accomplished it readily with alcoholates of alkaline metals:



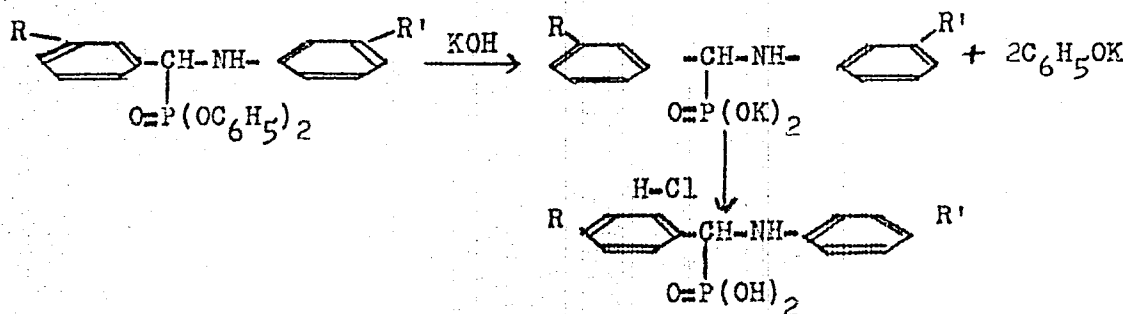
where R = H, n-CH₃, m-CH₃; R' = CH₃, C₃H₇, C₄H₉.

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USSR

KOZLOV, N. S., et al, Vestsi Akademiyi Navuk BSSR, No 2, 1970, pp 102-104

The authors also succeeded in obtaining N-aryl substituted aminophosphinic acid by heating the esters in an aqueous solution of potassium hydroxide and saponifying them, and subsequently treating them with a weak solution of HCl:



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USSR

KOZLOV, N. S., et al, Vestsi Akademiiy Navuk BSSR, No 2, 1970,
pp 102-104

These products are insoluble in ether, benzene, dioxane and water, but are soluble in alcohol and aqueous solutions of alkalies. When analyzed by infrared spectroscopy, the products do not give adsorption bands characteristic for the NH-group.

3/3

Acc. Nr:

AP0048937

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0079

100217f Catalytic synthesis of aromatic Schiff's bases.
Kozlov, N. S.; Pak, V. D.; Chuklinov, L. V. (Perm. Sel'sko-
khoz. Inst., Perm. USSR). *Zh. Obshch. Khim.* 1970, 40(1),
194-5 (Russ). Passing 1:3 (molar) $RC_6H_4NO_2 \cdot PhCH_2OH$ over
com. catalyst of Cu-promoted Al_2O_3 at $340-50^\circ/1$ atm at 0.4 ml/
min after the catalyst had been reduced 2 hr with H at 300° , gave
BzH and 30-60% $RC_6H_4N \cdot CHPh$ (R = H, o-Me, p-Me, o-Cl,
p-Cl, or p-Br).
G. M. Kosolapoff

REEL/FRA
19800709

di 7

USSR

PAK, V. P., ZHIROV, G. K., and KOROL', V. S., Kazakh Branch of the All-Union Scientific Research Institute of Exploration Geophysics

"Quantum Magnetometer"

USSR Authors' Certificate No 356615, Cl. G 01v 3/14, filed 17 May 71, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 136)

Abstract: The device contains a magnetosensing element on the principle of optical pumping, a signal pickup, an electronic counting frequency meter and an automatic graph plotter with a mechanical scanner. To increase recording resolution, a pulse generator is introduced, made in the form of a synchro-disk, rigidly joined to the drive of the scanner and uniformly quantizing the scale of the recorder for intervals whose graduation mark corresponds to the resolution of the low-order digit and the quantity equals the capacity of the interrogated counter, which is connected to the pulse generator output and during the recording cycle performs the role of zero organ, which controls the run-through of the recording mechanism according to the moment of overflow or coincidence of the readings of the interrogated counter.

1/1

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Heat, Combustion, Detonation

USSR

UDC:533.601.1.536.46

YERSHIN, Sh. A., PAK, V.V., SHEGUROV, A. A.

"Experimental Study of Aerodynamics of a Diffusion Flame with Supersonic Gas Flow"

Probl. Teploenerg. i Prikl. Teplofiz. [Problems of Thermal Power Engineering and Applied Heat Physics -- Collection of Works], No 9, Alma-Ata, Nauka Press, 1973, pp 112-120 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 11, 1973, Abstract No 11.34.41, from the resume)

Translation: The case is studied of axisymmetrical movement of a supersonic stream and flame in a flooded space. Experimental data are presented for various cross sections from the cross section of the nozzle and for two flow modes: $M=1.05$, $T_0=930^\circ \text{ K}$, $n=0.94$, and $M=1.25$, $T_0=950^\circ \text{ K}$, $n=0.92$.

The calculation of the supersonic diffusion flame is constructed on the basis of the method of the equivalent problem of the theory of heat conductivity, and the agreement with experimental data is satisfactory.
4 Figures; 9 Biblio. Refs.

1/1

USSR

UDC 621.43.011.533+621.5.533

YERSHIN, SH. A., ZHAPBASBAYEV, U. K., MOLYUKOV, I. D., and PAK, Y. V.

"The Aerodynamics of Supersonic Flows of a Compressible Gas"

Alma-Ata, Matematika i Mekhanika. Tezisy Dokl. 4-oy Kazakhstan. Mezhvuz. Nauch. Konf. po Mat. i Mekh. Ch. 2 (Mathematics and Mechanics. Theses of Lectures of the Fourth Kazakhstan Conference of Schoold of Higher Learning on Mathematics and Mechanics. Part 2), 1971, pp 203-205 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2B392 by A. S. Tikhotskiy)

Translation: The article presents the results of an experimental investigation of a supersonic jet (submerged and with weak occurrent flow). The installation consisted of two coaxial pipes 200 and 400 mm in diameter; on one end of the pipes were profiled nozzles, one of them with a vent diameter of 5 mm (a Laval nozzle) and the other with a vent diameter of 100 mm (a Vitoshinskiy nozzle). At the other end of the pipes are fittings for supplying air from a system consisting of high-pressure capacities and a fan. The basic regime parameters of the experiments were within the limits of $2 \leq p_0 \leq 8$ and $340 \leq u_0 \leq 600$, where p_0 is the pressure at the Laval-nozzle inlet,

u_0 is the discharge velocity from the Laval nozzle.

It is established that the laws governing the development of the jet

1/2

PAK, Z. P.

SO: JPRS 54340
28 OCT 71

PROMISING METHODS FOR WATER RECLAMATION IN SPACECRAFT LIFE SUPPORT SYSTEMS

S. V. Chizhov, B. A. Adonov, Yu. Ye. Sinyak, V. B. Gaydadyanov, Z. P. Pak, I. I. Hkina, I. S. Fein, V. V. Vasilovskiy

pp 1-9

Abstract: 1. This paper convincingly demonstrates the need for developing regenerative life support systems, water regeneration from water-bearing wastes being the first and foremost step in their design and development. The selection of a particular water regeneration method is dependent on a complex functional relationship between the flight program, flight duration, spacecraft power supply, number of crew members, possibility of replenishing the food supply, weight and reliability of the life support system, etc. 2. An analysis of the sources of water-bearing wastes, mass flows, and their chemical composition demonstrates that most of the water can be reclaimed using the sorption technique. The technique can also be applied to the atmospheric condensate, transpiration water of higher and lower plants, water produced by electrochemical generators, condensates resulting from catalytic decomposition of hydrogen peroxide, and catalytic hydration of carbon dioxide. This technique can also be used in attaining a high purification of water formed during any other regeneration method. It may well be employed, although with certain limitations, to regenerate wash water. The application of the technique is illustrated by experimental data derived from a one-year medical-engineering test. 3. When developing life support

USSR

UDC: 547.944/945

MARGVELASHVILI, N. N., PAKALN, D. A., All Union Scientific Research Institute of Medicinal Plants

"Investigation of the Composition of Corydalis Persica Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1973, p 133

Abstract: The authors study the alkaloid makeup of tubers of *Corydalis persica* Cham et Schlecht of the family Papaveraceae. The alkaloid sum (1.63%) was isolated by the dichloroethane method. Column chromatography on aluminum oxide and extraction with diethyl ether yielded a white crystalline optically inactive substance of empirical formula $C_{20}H_{15}O_5N$ with melting point of $266^{\circ}C$ (ether) identified as sanguinarine. Extraction with a diethyl ether chloroform mixture (97:3) produced chelerythrine $C_{21}H_{19}O_5N$ with melting point of $208^{\circ}C$ (ether). Extraction with a diethyl ether chloroform mixture (95:5) gave a substance with empirical formula $C_{20}H_{19}O_5N$ and melting point of $204-205^{\circ}C$ identified as protopine.

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USSR

UDC 577.170.49

UPITIS, V., ~~PAKALNE, D.~~, and NOLLENDORFA, A. , Institute of Biology, Academy of Sciences Latvian SSR

"Little Investigated Trace Elements in Chlorella. II. Nickel"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 4 (285), 1971, pp 24-34

Abstract: A laboratory investigation of the effects of trace elements on Chlorella cultures revealed that the presence of nickel in the nutrient medium (0.01-30 mg/ml) exerts no stimulating effects. On the contrary, as the concentration of this trace element rises above 0.5 mg/ml, Chlorella growth is correspondingly suppressed and chemical changes develop in the cells: chlorophyll is partly destroyed, protein concentration decreases, and carbohydrate concentration increases. The toxic effects of nickel can be reduced by: adding the chelating agent Na_2EDTA to the nutrient medium; increasing the concentration of other trace elements; increasing the concentration of zinc (competes with nickel) to 1-5 mg/ml; or increasing the density of the Chlorella suspension.

1/1

USSR

UDC 669.017:537+535

MEL'NIKOV, N. A., ~~PAKCHANIN, I. M.~~, and PWTRENKO, P. V., Kiev State University

"Study of Recovery Processes in a Ni-20% Cr Alloy"

Kiev, Metallofizika, No 40, 1972, pp 78-84

Abstract: The effect of various defects on close ordering processes was studied. An investigation of the relationship of residual electrical resistance to quench temperature after isochronous annealing of the alloys was conducted after the latter were subjected to various treatments. The blocks of coherent scattering, microdistortions, and dynamic and static distortions of the alloy were measured. It was shown that the residual electrical resistance depends essentially on the initial state of the alloy. In the temperature region of -196 to -90°C, recovery is accompanied by a drop of electrical resistance which at a higher temperature varies by growth. The results obtained are explained by migration of the different defects leading to close ordering. 5 figures, 21 bibliographic references.

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USSR

KHAZARADZE, R. YE., and PAKELIANI, M. M.

"Study of the Effect of Tannine-Catechine Complex on the Deposition of Strontium-90 and Calcium-45 in the Bones of Animals"

Sanitariisa da Khigiyenis Sametsniyerokvleviti Instituti. Sakartvelos SSR. Shromata Krebuli. Sb. Tr. NII Sanitarii i Gigiyeny. Gruz SSR (Collection of Works of the Scientific Research Institute of Sanitation and Hygiene Georgian SSR) 1972, No 9, pp 157-160 (from RZh - Biologicheskaya Khimiya, No 22, Nov 73, Abstract No 2061)

Translation: Tannine-catechine complex (pure total of catechines obtained from a compound preparation of yellow tea dye) may be used as a protective agent against the deposition of Strontium-90 both in short term and chronic penetration into an organism. However, in case of chronic penetration, it is necessary to add calcium.

1/1

USSR

BARANOVSKIY, A. L., VASIL'YEV, A. V., PAKHAR'KOVA, A. I.

"Electrostimulator"

Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17,
1973, USSR Author's Certificate No 376097, p 16

Translation: An electrostimulator is introduced which contains a low-frequency stimulating pulse generator and an isolating device comprising a high-frequency generator, a low-capacitance transformer and a low-frequency filter. The device is distinguished by the fact that in order to decrease the artefact, it contains a modulator-breaker connected through a square pulse shaper to the high-frequency generator, the signal input of the modulator-breaker is connected to the low-frequency stimulating pulse generator, and the output is connected through a linear amplifier to the primary winding of the low-capacitance transformer, the square pulse shaper is connected, in addition to the primary winding of the additional low-capacitance transformer introduced into the structural design of the electrostimulator, and the secondary winding of the latter is connected to the input of the reference voltage of the phase-sensitive detector.

1/1

USSR

UDC 620.17

GORBACH, S. S., MARKOVSKIY, V. YU., PAKHNEV, A. V., and SHAKOL'SKAYA, M. P.

"Influence of Various Factors Upon Photoelastic Coefficients During the Measurement of Stresses in Cubic Single-Crystals by the Polarization-Optical Method"

Tallin, VII Vses. Kong. po Polaryarizatsionno-Optich. Metodu Issled. Napryazheniy. 4 — Sbornik (Seventh All-Union Conference on the Polarization-Optical Method of Stress Research. 4 — Collection of Works), 1971, pp 141-144 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1628 by V. D. Kopytov)

Translation: A report is given on the results of an experimental investigation of the influence of the temperature, wavelength, and impurities upon the value of the photoelastic coefficients of alkaline-halide crystals of NaCl, KCl, KBr, KY and RbY. It turned out that the photoelastic coefficients increase with an increase of temperature. Only for NaCl crystals was such an effect not observed. Increasing the wavelength also first brings about an increase of the optical coefficient, and then, starting with certain wavelength values (on the order of 577 nanometers) it begins to decrease. Here the wavelength interval at which a sharp decrease of the optical coefficients begins, is shifted toward high temperature. Increasing the percent content of 1/2

Waveguides

USSR

WDC 621.372.85(088.8)

SHVORINA, I. M., MALORATSKIY, L. G., PAKHOMOV, I. M.

"Waveguide-Band Power Divider"

USSR Author's Certificate No 254598, Filed 25 Dec 67, Published 11 Mar 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B153P)

Translation: The proposed power divider contains a symmetrical ribbon line and a waveguide shorting plug. In order to decrease the losses and simplify the design, two coaxial waveguide holes are cut in the screen plates of the ribbon line. The design of the wide walls of the holes is perpendicular to the plane of symmetry of the ribbon line, and it is symmetrical with respect to the conducting axis of the band. There is one illustration.

1/1

USSR

UDC: 621.317.765.8

GLADKIKH, G. A., PANOV, V. G., PAKHOMOV, I. P., and CHICHIK, P. D.

"Infra-Low Noise Frequency Generator"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 124-125

Abstract: The instrument described in this paper is designed for tuning measurement devices by producing electrical noise in the frequency range of 0-1 kHz. Known in spectrometry as the method of heterodyning to zero, the basis principle of the instrument is to shift the noise spectrum into the infra-low frequency range. As shown by the accompanying block diagram, the instrument consists of a noise source feeding through a matching stage to a band-pass amplifier, and thence to a multiplier, where it is mixed with the output of a heterodyning oscillator. The beat frequencies are then put through a low-pass filter. The noise source is a silicon stabilitron of the D814V type connected in series with a KP111 silicon transistor, and the heterodyning oscillator uses 1T403V transistors, its tuned circuit being resonant to 35 kHz. A circuit diagram of the noise generator is given.

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- 82 -

172 U40
UNCLASSIFIED
TITLE--CN REALIZATION OF THE TEMPERATURE SOUNDING METHOD OF THE
TROPOSPHERE FROM EARTH'S SATELLITES, A NUMERICAL EXPERIMENT -U-
AUTHOR--(02)--PAKHOMOV, L.A., SHAFRIN, YU.A.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 5, PP 24-35
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY
TOPIC TAGS--TROPOSPHERE, ATMOSPHERIC TEMPERATURE, SPACECRAFT CARRIED
EQUIPMENT, ATMOSPHERIC OZONE, ATMOSPHERIC WATER VAPOR, SPACEBORNE
ATMOSPHERIC OBSERVATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0080
STEP NO--UR/0050/70/000/005/0024/0035
CIRC ACCESSION NO--AP0132373
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITIES OF THE TROPOSPHERE TEMPERATURE SOUNDING BY MEANS OF INSTRUMENTS MOUNTED ON EARTH'S SATELLITES ARE ESTIMATED ON THE BASIS OF ONE OF THE AVAILABLE METHODS OF STABILIZING THE UNSTABLE SOLUTION OF FREDHOLM'S INTEGRAL EQUATION OF THE FIRST KIND. IT IS SHOWN THAT THE INFORMATION CONTENT OF THIS METHOD DECREASES CONSIDERABLY DUE TO LARGE ATMOSPHERIC THICKNESS OVER THE LAYERS SUBJECT TO STUDY AS WELL AS UNCERTAINTY OF THE UNDERLYING SURFACE EMISSIVITY AND OZONE AND WATER VAPOUR CONTENT. WAYS OF FURTHER DEVELOPMENTS ARE OUTLINED. FACILITY: TSENTRAL'NAYA AEROLOGICHESKAYA OBSERVATORIYA.

UNCLASSIFIED

Nondestructive Testing

USSR

UDC 621.771.23

LIPUKHIN, YU. V., PAKHOMOV, L. N., and GUTNIK, M. V. (Cherepovets Metallurgical Plant, Ministry of Ferrous Metallurgy USSR)

"Non-Destructive Testing of a Weld in Continuous Chemical Cleaning"

Moscow, Metallurg, No 9, Sep 71, pp 28-29

Abstract: A new method of non-destructive testing of weld joints in chemical cleaning, based on pressing in a punch into a weld with simultaneous application of dynamic loads, is described. Tests were conducted on a special stand. The results show that such testing makes it possible to roll strips with welded joints without decreasing the rolling rate. The hourly productivity of the mill is increased significantly and the quality of the finished sheet is improved. Refuse decreases, due to process stabilization. The method described can also be used in investigating the separation of metal into layers.

AP9040907

NUCLE

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36653 (NP-tr-1789) DETERMINATION OF THE PARAMETERS OF A PLASMA FORMED BY THE EFFECT OF MICROWAVE POWER IN A MAGNETIC FIELD STEADY-STATE CONDITIONS. Anisimov, A. I.; Vinogradov, N. I.; Golant, V. E.; Nanobashvili, S. I.; Pakhomov, L. P. (Akademiya Nauk SSSR, Leningrad: Fiziko-Tekhnicheskii Institut). Translated for Culham Lab., Abingdon, Eng., from report FTI-115, 13p. (CTO-614). Dep. CFSTI.

A plasma was produced by using microwave power in the 3-cm-wavelength range in the electron cyclotron resonance condition. Measurements were carried out in hydrogen at pressures of 5×10^{-4} to 10^{-2} torr and an applied microwave power of the order of 200 W. The steady-state charged-particle concentration was in the range from 10^{11} to 10^{12} cm $^{-3}$, and the electron temperature from 1.5 to 15 eV. The experimental results are analyzed on the basis of the balance equation. (auth)

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72 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TIVE--EXOTHERMIC MIXTURE FOR STEEL POURING -U-
AUTHOR--(05)-ASTROV, YE.I., KLIPOV, A.D., KONYSHEV, V.I., LEYBOVICH, P.M.,
PAKHOMOV, N.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 262,329
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(6)
DATE PUBLISHED--26JAN70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--METALLURGIC PATENT, METALLURGIC PLANT, EXOTHERMIC PROCESS,
SLAG, FOUNDRY TECHNOLOGY, STEEL MANUFACTURE PROCESS, FLUORITE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
COXY REEL/FRA--3001/1462 STEP NO--UR/0482/70/000/000/0000/0000
RC ACCESSION NO--AA0126993
UNCLASSIFIED

12 013

UNCLASSIFIED

PROCESSING DATE--27NOV70

RC ACCESSION NO--AA0126993

STRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN EXOTHERMIC MIXT., FOR PREPG.
SLAG DURING THE CASTING OF STEEL, HAS THE FOLLOWING COMPN. SILICO-CALCIUM
25-35, CA, (NO SUB3) SUB2 OR KND SUB3 5-15, FE CINDER 20-5, A SUBSTANCE
CONTG. B OXIDES 1-10 WT. PERCENT, AND FLUORITE THE REMAINDER.
FACILITY: GORKOVSKIY METALLURGICHESKIY ZAVOD.

UNCLASSIFIED

USSR

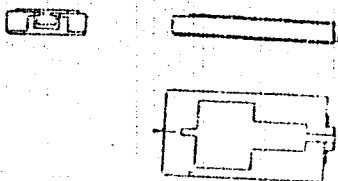
PAKHOMOV, P. P., TRUBITSYN, B. P.

UDC 621.372.82

"A Microwave Delay Line"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326673, Division H, filed 9 Jan 70, published 19 Jan 72, p 202

Translation: This Author's Certificate introduces a microwave delay line which contains a section of strip transmission line, a piezoelectric transducer, a single-crystal acoustic line, and activating and matching elements. As a distinguishing feature of the patent, losses are reduced and the manufacturing technique is simplified by applying the piezoelectric transducer to part of the grounding plate which is placed across the end face of the single-crystal acoustic line, which acts at the same time as the substrate for the asymmetric transmission line. The exciter section of the conducting strip of the transmission line is placed across the free surface of the transducer.



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USSR

UDC 621.165.533.6 (2)

ZIL'BERMAN, A. S., Candidate of Technical Sciences, LOPATITSKIY, A. O., Candidate of Technical Sciences, NAKHMAN, Yu. V., Candidate of Technical Sciences, VOL'FSON, I. M., Engineer, OZERNOV, L. A., Engineer, and PAKHOMOV, V. A., Engineer, Leningrad Metal Plant, Higher Technical Educational Institution at Leningrad Metal Plant

"Additional Energy Losses Through Periodical Unsteadiness of the Flow in Rotor Blades of Turbine Stages"

Moscow, Teploenergetika, No 10, Oct 73, pp 55-59

Abstract: The quantitative coupling of additional unsteady profile losses of energy in rotor blades with normal operation turbine stage parameters was experimentally investigated on stage models with more than twenty combinations of nozzle and rotor lattices of various types. A complex of factors affecting the change of profile energy losses in rotor lattices was analyzed. Based on generalized experimental data, a functional dependence of additional unsteady profile losses in rotor lattices ($\Delta \xi_r$) on a derived criterion of unsteadiness (Y) is suggested. The

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USSR

ZIL'BERMAN, A. S., et al., Teploenergetika, No 10, Oct 73, pp 55-59

function $\Delta \zeta_r = F(Y)$ for all investigated stages is shown with and without accounting for deviations from the calculated regime. The additional losses increase essentially (from 0 to 7.5 %) within the limits $0.4 \cdot 10^{-2} < Y < 1.2 \cdot 10^{-2}$ and remain practically constant at further increase of Y . The derived functional dependence encompasses typical cases of stages of modern stationary turbines in the zone of moderate hub ratios. Two figures, one table, fifteen formulas, fourteen bibliographic references.

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- 114 -

USSR

UDC: None

CHKALOVA, V. P., RUBIN, A. I., PAKHOMOV, V. G., and POPOVICH, B. D.

"Electromagnetic Phase Method of Controlling the Thickness of
Nonmagnetic Conducting Coatings on a Ferromagnetic Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye
znaki, No 12, 1973, p 113, No 371413

Abstract: In this device, eddy currents are excited in the specimen
and the thickness of the latter's coating is obtained from the
phase of the voltage induced. A special choice of the exciting
transmitter's frequency and of the current frequency improves the
accuracy of the device and enables the operator to dispense with
a standard.

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USSR

UDC: 51:621.391

PAKHOMOV, V. I., KORICHNEV, L. P., MOSKVITINA, A. A.

"On Calculating the Time of Transmission of a Codogram in a System With Random Selection of Nonstationary Channels"

Tr. Ryazan. radiotekhn. in-ta (Works of Ryazan Radio Engineering Institute), 1972, vyp. 30, pp 208-213 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V455 by Yu. Pyatoshin)

Translation: The paper deals with transmission of information over short-wave communications channels whose properties vary with time. The average time of transmission of a certain amount of information is calculated as a function of the permissible number of errors during the transmission time using a certain channel switching algorithm (an infinite number of communications channels are available which vary their properties with time and are described by a certain model).

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USSR

UDC: 51.621.391

PAKHOMOV, V. I., KORICHNEV, L. P., and MOSKVITINA, A. A.

"Computing the Transmission Time of a Codogram With a Random Choice of Nonstationary Channels"

Tr. Ryazan. radiotekhn. in-ta (Transactions of the Ryazan Radio Engineering Institute) No 30, 1972, pp 208-213 (from RZh-- Matematika, No 7, 1973, Abstract No 7V455)

Translation: The transmission of information over shortwave channels of a communication whose characteristics vary with time is considered. The average time for transmitting a certain amount of information is computed as a function of the permissible number of errors for the transmission time with the use of an algorithm for channel switching (an infinite number of channels, the characteristics of each varying in time and describable by some model, is available). Yu. Pyatoshin

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USSR

UDC 678.84.01:537

BAZHENOVA, T. S., PAKHOMOV, V. I., ZHDANOV, A. A., POLYAKOVA, L. L.,
SMIRNOVA, L. N., EKSANOVA, N. D., and TARASOV, Ye. V.

"Electric Properties of the Epoxyorganosilicon Resin ES-9 and Compounds
Based on This Resin"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 21-23

Abstract: Results are reported of the study of electric properties of the compounds based on dianic resin ED-5, polyfunctional resin ETP and epoxy-siliconorganic resin TPE-9 containing triphenylpentamethoxytrisiloxane [resin ES-9]. It was shown that the ES-9 resin is a good, active solvent for compounds based on any epoxy resin prepared for electrotechnical utilization. The ES-9 resin lowers considerably the starting viscosity of the epoxy binder preserving at the same time all of the desired electric properties of epoxy compounds both under normal usage as well as during prolonged heating, increased humidity, and elevated temperature.

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PAKHOMOV, V. I.

meteorology

MOVABLE DEVICE FOR GRADIENT TEMPERATURE AND WIND VELOCITY MEASUREMENTS IN THE ATMOSPHERE

UDC 551.596(29-59)

Article by Yu. B. Delinov, A. E. Kovalev, V. I. Pakhomov, Institute of Experimental Meteorology, Moscow, USSR, submitted 16 June 1971, pp 102-105

A device, mounted on two trucks for measuring the wind velocity and temperature distribution in the ground layer of the air is described.

When describing a method for determining "warm" jets in warm jets (from the bottom of the warm jet in the atmosphere as a function of the nature of logical conditions and operating conditions of the engine).

The project in France and the USA (A. E. Kovalev) demonstrated the possibility of scattering fog by warm jets. The most significant question now is the choice of the principles of efficient placement of the jet engines with respect to the takeoff and landing strips of airports.

The Institute of Experimental Meteorology of the USSR Academy of Sciences created a portable meteorological device upon the investigation of characteristics of the warm jets from the engines in 1970 for which it was necessary primarily to create a portable meteorological device. This device was divided into two parts, one of which is used to take the meteorological readings above the Earth's surface, and the recording equipment is placed in the cockpit.

A general view of the device appears in Figure 1. The motor vehicle consisting of two motor trucks, approximately equal parts. The upper part of the boom can be set in the vertical plane at practically any angle to the lower part, and the lower part can be swung with the aid of a special device with respect to the ground surface. The entire boom can turn vertically around the vertical axis at an angle on the order of 360 degrees. All of this is done with the aid of a special device. The device is used for the purpose of the experiment, setting the boom either vertically or horizontally.

(3)
Mikhailovskiy
Soviet: 1972
21 Aug 1972

USSR

UDC: 621.391:519.2

PAKHOMOV, V. I., KORICHNEV, L. P.

"Investigation of Interference Stability in the Case of Compression of Signals With Interference"

Tr. Ryazansk. radiotekhn. in-ta (Works of the Ryazan Radio Engineering Institute), 1970, vyp. 23, pp 158-164 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A19)

Translation: The paper deals with the interference stability of an algorithm proposed by the authors for compression of an assemblage of independent measurement signals of the Wiener type with respect to additive interference in the form of normal white noise. The threshold of the interference increments is given by a constant equal to half the quantization step. It is shown that this algorithm has filtering properties. Two illustrations, bibliography of four titles. N. S.

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USSR

UDC: 621.391:519.2

PAKHOMOV, V. I., KORICHNEV, L. P.

"Evaluating the Effectiveness of Compression of a Set of Wiener Signals"

Tr. Ryazansk. politekhn. in-ta (Works of the Ryazan Polytechnical Institute), 1970, vyp. 23, pp 148-158 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A30)

Translation: The authors consider the effectiveness of an algorithm for compression of an assemblage of Wiener measurement signals based on analysis of all signal increments at the instant or readout. It is shown that when this algorithm is used the coefficient of compression of the assemblage is greater than 1, i. e. that this algorithm is more effective than compression algorithms based on analysis of the properties of the individual signals. One illustration. N. S.

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1/2 - 008
UNCLASSIFIED
TITLE--REACTION OF CHLOROMETHYLALKOXY-SILANES WITH
N-PHENYLAMINOETHOXY, ALKYL, SILANES -U-
AUTHOR--(03)-ZHDANOV, A.A., PAKHOMOV, V.I., ARKHIPOV, I.A.
PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 392-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SILANE, CHLORINATED ORGANIC COMPOUND, HETEROCYCLIC
BASE COMPOUND, DISTILLATION, AMINE, BENZENE DERIVATIVE, ALKOXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1765
STEP NO--UR/0062/70/000/002/0392/0396
CIRC ACCESSION NO--AP0120472
UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--AP0120472
ABSTRACT/EXTRACT--(U) GP-0-
COLUMN SHOWN ON MICROFICHE.
SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. DISTN. THROUGH A FRACTIONATING
FACILITY: INST. ELEMENTOORG.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANISM OF THE SOLUBILITY OF QUARTZ IN PURE WATER IN A WIDE RANGE
OF TEMPERATURES AND PRESSURES -U-
AUTHOR--(02)-GANEYEV, I.G., PAKHOMOV, V.I. P
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 351-4
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--SOLUBILITY, QUARTZ, PRESSURE EFFECT, HYDROLYSIS, DISTILLED
WATER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1048 STEP NO--UR/0020/70/191/002/0351/0354
CIRC ACCESSION NO--AT0119915
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119915

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM IS DISCUSSED FOR DIFFERENT TEMPS. ON THE BASIS OF LITERATURE DATA. AT LOW TEMPS., LESS THAN 100DEGREES, THE 1ST STEP IN THE SOLN. MECHANISM IS THE HYDROLYSIS OF THE SURFACE LAYER FOLLOWED BY THE REACTION OF THE HYDRATED SURFACE WITH THE DISSOCD. PART OF THE H SUB2 O. THE SOLY. IS DETD. BY THE ACTIVITY OF THE DISSOCD. PART OF THE H SUB2 O. AT 250-265DEGREES THERE IS A DECREASE IN THE DIELEC. CONST. OF THE H SUB2 O WHICH LIMITS THE HYDRATION PROCESSES. IN THIS CASE PROCESSES ARE DEVELOPED FOR THE HYDROLYTIC SPLITTING OF THE SIO SUB2. IN THE REGION OF A SHARP DECREASE IN THE SOLY. OF QUARTZ (350-374DEGREES), THE HYDROLYSIS AND HYDRATION PROCESSES ARE NOT HIGHLY DEVELOPED. ABOVE 400DEGREES THE INCREASE IN THE SOLY. IS ATTRIBUTED TO THE ACTIVITY OF THE DISSOCD. PART OF THE H SUB2 O. THE STRUCTURE OF THE SOLNS. AND ITS DEVELOPMENT ARE DISCUSSED. IT IS SUGGESTED THAT THE FORM OF THE DISSOLVED STATE OF SIO SUB2 DIFFERS AT HIGH PRESSURES AND TEMPS. FROM THAT AT LOW PRESSURES AND TEMPS.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA. MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 678.84-419.8:677.521].01:53

PAKHOMOV, V. I., KOPYTOVA, L. B., and SHMIDT, N. A.

"Thermostable Organosilicon Glass Textolite SMF-50"

Moscow, Plasticheskiye Massy, No 7, Jul 70, p 20

Abstract: Glass textolite SMF-50 is obtained by pressing cloth impregnated with organosilicon resin MF-50. The glass cloth brands used for impregnation are ASTT (b)-S, T, TS-8/2-250. Glass textolite SMF-50 possesses good thermostability, as well as stability of mechanical and dielectric indices under elevated temperatures. It can be used as an electric insulating and structural material in the radio and electrical engineering industry.

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USSR

UDC: 621.317.784.023

KOMOV, A. N., PAKHOMOV, V. V.

"SHF Power Meters Based on Hall emf Pickups"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 44, pp 69-74 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A283)

Translation: A method based on the Hall effect in semiconductors belongs to the small number of methods of power measurements in the millimeter wavelength range which permit measuring true power flow. The operating principle is explained for meters in this category for waveguide use, and their advantages are pointed out. An investigation was made of meters for the indicated band based on N-type and P-type InSb pickups and N-type InAs pickups over the wide temperature interval from -160 to +80°C. The experimental procedure is presented and the results of the experiment are discussed. Five illustrations, bibliography of six titles. E. L.

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ПАКХОМОВ

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent,

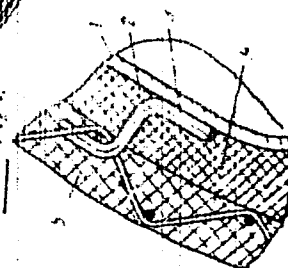
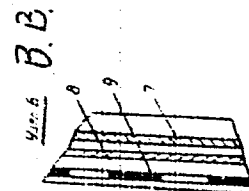
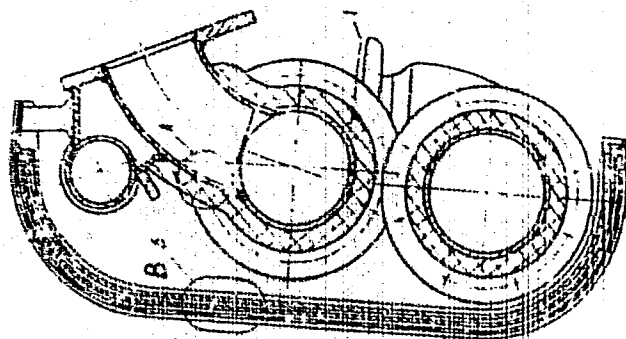
244806 HEAT SHIELD on the hot plate spot of the exhaust manifold of ship or locomotive diesel engine, is improved by coating the manifold 1 with asbestos sheet 2 and an outer coating of insulating and heat resisting material 5 which consists of solidified mixture of soluble glass, white heat resisting clay and asbestos fibre. The material 5 is held round the manifold 1 by a steel net held by wires 4 and hooks 3 (Sec. A.A.). The heat shield 6 is mounted over the asbestos coverings and consists of internal perforated sheet 9 and plain sheets 7 and 8 welded inside the carcass of 6 and having air spaces. (Sect. B.B.).

12.4.68 as 1233258/24-6 A.I. KAMYSHOV et al. V.V.
Kubishev Kolomenski Locomotive Plant (9.10.69)
Bul. 18/28.5.69. Class 46c, Int. Cl. F 02f.

19821397

AA0052657

Kamyshov, A. I.; Vorozhikin, V. A.; Shiryayev, V. M.;
Pakhomov, V. V.; Kolomenskiy Teplovozostroitelnyy Zavod im. V. V. Kuy-
bysheva



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19821398

USSR

UDC 621.391.2

ZACHEPITSKIY, A. A., MARESKIN, V. M., PAKHOMOV, YU. I.

"Detection of Weak Signals Against a Background of Narrow Band Noise"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2055-2063

Abstract: A study was made of the problem of detecting a weak signal against a background of narrow band noise. The structure of the optimal detector was determined for a class of nonstationary nongaussian noise, and its efficiency was evaluated. The algorithm is defined for optimal detection of weak signals and narrow band noise as a nonlinear inertialess transformation and matched processing of a discrete sample of quadrature components of the input process. The optimal processing algorithm is also presented for noise distribution in polar coordinates. Some examples of gaussian nonstationary noise are also considered.

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USSR

UDC: 621.391.8

ZACHEPITSKIY, A. A., KLETSKINA, G. L., PAKHOMOV, Yu. I.

"Discrimination of Two Linear Frequency-Modulated Pulse Signals in a Circuit Comprised of a Limiter and a Matched Filter"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 350-356

Abstract: It is assumed that the sum of two narrow-band signals which are partially time-coincident acts on the input of a circuit made up of a non-linear element and a matched filter connected in series. Expressions are found for the signals leaving the output of the linear element and at the output of the matched filter. It is shown that clipping leads to distortion of the principal signals and to additional satellite signals which are displaced in time relative to the principal signals. Estimates are given for the parameters of these signals with various degrees of overlap, and the results of experiments are presented. As a whole, the qualitative effects and quantitative laws of the theory were confirmed by the experimental results.

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1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE ACTIVITY OF LYSOZYME OF THE BLOOD SERUM IN A DIFFERENT CONTENT
OF TRACE ELEMENTS IN THE RATION -U-
AUTHOR--PAKHOMOV, YU.N.
COUNTRY OF INFO--USSR
SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR
3, PP 63-64
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD SERUM, WHITE RAT, DIET, TRACE ELEMENT, NICKEL, COPPER,
ZINC, IRON, ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0844 STEP NO--UR/0219/70/069/003/0063/0064
CIRC ACCESSION NO--AP0052278
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BLOOD SERUM LYSOZYME TITER IN ALBINO RATS WAS INVESTIGATED IN A RATION DEFICIENT IN THE FOLLOWING TRACE ELEMENTS, NI, CU, ZN AND FE. THERE WAS NOTED A SHARP REDUCTION OF THE LYSOZYME TITER IN A DEFICIENCY OF A COMPLEX OF TRACE ELEMENTS (BY 57 TO 64PERCENT) AND OF INDIVIDUAL TRACE ELEMENTS, ESPECIALLY CU AND NI (DECREASE OF THE INDEX BY 54 TO 72PERCENT AND 50 TO 59PERCENT RESPECTIVELY). ZN AND ESPECIALLY FE DEFICIENCY IN THE RATION DID NOT LEAD TO SUCH SHARP ALTERATIONS IN THE LYSOZYME ACTIVITY.

UNCLASSIFIED

Nuclear Science and Technology

USSR

UDC 669.296.5:621.039.5

ANDREYEVA, A. B., BELOKOPYTOV, V. S., VOTINOV, S. N., DEREKIZOV, M. D.,
PETIN, B. P., PAKHOMOV, Z. I.

"Study of Fuel Assemblies of the VK-50 Boiling Reactor"

Radiation. fiz. tverd. tela i reaktornye materialoved. -- V sb. (Radiation
Solid State Physics and Reactor Material Science -- collection of works),
Moscow, Atomizdat Press, 1970, pp 208-212 (from RZh-Metallurgiya, No 4, Apr
71, Abstract No 41842)

Translation: The results of studying the fuel assemblies of a boiling re-
actor after operation in the reactor core for 5,000 hours are described.
The fuel element cores are briquettes of sintered UO_2 with 2% enrichment.

The can material was Zr + 1% Nb alloy, and the jacket material was Zr + 2.5%
Nb alloy. A significant amount of the hydride phase was detected in the cans
of ruptured fuel elements in defective places. The article contains 1 illus-
tration and a 4-entry bibliography.

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PAKHOMOV, Z. I.

JPRS 55882
4 May 1972

UDC 621.039.55+621.311.25:621.039

STUDY OF THE BUILDUP OF PLUTONIUM ISOTOPES IN THE FUEL OF THE
VVER-1 REACTOR OF THE NOVO-VORONEZHSKIY ATOMIC POWER STATION

[Article by V. Ya. Gabeskiriya, V. S. Belokopytov, G. A. Miller, G. A. Slonkin, L. I. Burmyakov, Z. I. Pakhomov, N. A. Vladimirova, and I. V. Maryashchuk. Scientific Research Institute of Atomic Reactors, Belokost, Novosibirsk. Izvestiya Akademii Nauk SSSR, 1970, No. 1, p. 155. Russian. 10 refs. Translated into English by the Scientific Information Center of the USSR Academy of Sciences. Printed in the USSR, 1970. 16 pp.]

Introduction

The isotopic composition of irradiated fuel in samples cut from fuel elements of the VVER-1 reactor of the Novo-Voronezhskiy Atomic Power Station was investigated in order to determine experimentally the isotopic composition of irradiated fuel in a reactor of the VVER type within the framework of contract no. 577/78 with the International Atomic Energy Agency. The tasks of this study were:

- (a) determining the uranium and plutonium isotopic composition after irradiation of the fuel;
 - (b) determining the number of plutonium isotopes formed as a result of irradiation;
 - (c) determining the isotopic composition of the fuel as a function of the degree of burn-up.
1. Preparation of Samples
- The assembly from which the fuel element was taken was irradiated for 2.75 years and held for 1.5 years before the investigation.

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE EMPLOYMENT OF RADIOISOTOPES IN THE COMPLEX DIAGNOSIS OF TUMORS
OF THE EYE AND ORBIT -U-
AUTHOR--DUBOVYY, YE.D., PAKHOMOVA, A.I., PANFILOVA, G.V., GORSKIY, L.A.,
SOKOLOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 30-34
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIAGNOSTIC METHODS, MEDICAL NUCLEAR APPLICATION, TUMOR, EYE,
PHOSPHORUS ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1690

STEP NO--UR/0241/70/015/003/0030/0034

CIRC ACCESSION NO--AP0101745

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS EXAMINED 351 PATIENTS WITH TUMORS OF THE EYE AND ORBIT, OF THIS NUMBER 296 WERE OPERATED UPON.

THE FIRST GROUP INCLUDED 174 PATIENTS WITH INTRIO ULAR TUMORS. THESE PATIENTS WERE EXAMINED WITH THE AID OF RADIOPHOSPHORUS. IN LOCALIZATION OF THE TUMOR ON THE CONJUNCTIVA AND SOLERA A COINCIDENCE OF THE RESULTS OF RADIOMETRIC INVESTIGATIONS WITH CLINICAL AND HISTOLOGICAL DATA WAS NOTED IN 90 PER CENT OF CASES, WHEREAS IN MALIGNANT MOLANOMA OF THE VASCULAR MEMBRANE AND CILIARY BODY, IN 83 PERCENT AND IN MALIGNANT TUMORS OF THE IRIS, IN 71 PER CENT OF CASES. IN LOCALIZATION OF TUMORS IN THE POSTERIOR REGION OF THE EYE TRANSCONJUNCTIVAL RADIOPHOSPHORUS DIAGNOSIS WAS CARRIED OUT. THE SECOND GROUP CONSISTED OF 122 PATIENTS WITH TUMORS AND TUMOR LIKE DISEASES OF THE ORBIT AND ADJACENT REGIONS. THIS GROUP OF PATIENTS WAS EXAMINED WITH THE AID OF P PRIME32, I PRIME131, DIP AND I PRIME125. A COINCIDENCE OF DATA OF RADIOISOTOPE DIAGNOSIS WITH THE RESULTS OF CLINICAL AND HISTOLOGICAL INVESTIGATIONS FOR BENIGN TUMORS WAS 89.4 PER CENT, FOR MALIGNANT, 86.6 PER CENT OF CASES.

UNCLASSIFIED

USSR

KOLESNIK, Ye. S., MAKAROVA, S. B., PAKHOMOVA, E. M., YEGOROV, Ye. V.

"Anomalies in Sorption in Phosphoric Acid Ionites"

Anomalii pri Sorbtsii na Fosfornokislykh Ionitakh [English Version Above], Moscow, 1971, 13 pages; (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1415 Dep. by the author's).

Translation: It is demonstrated that ordinary styrene bivinylbenzene phosphate resins (I) have low Th capacity; their ion-exchange equilibrium is established very slowly; the Th diffusion factor in I is very low, 10^{-11} cm²/sec. The Th distribution factor increases with increasing concentration of nitric acid and dispersion of I. After contact with Th solutions, I reduces its capacity for many multiply charged ions. As swelling ability increases, the rate of Th exchange and capacity of I for this ion increase sharply. Assumptions are made explaining the anomalous behavior of I for Th.

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--POLAROGRAPHIC REDUCTION OF METHYLENE BLUE. REPLY--U-

AUTHOR--(03)-PAMFILOV, A.V., MAZURKEVICH, YA.S., PAKHOMOVA, E.P.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1), 100-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REDUCTION, METHYLENE BLUE, QUINONE, POLAROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1983

STEP NO--UR/0073/70/036/001/0100/0102

CIRC ACCESSION NO--AP0125572

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125572

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ANSWER TO R., BRDICKA (IBID. 99-100) P. AND COWORKERS FIND THAT THE POLAROGRAPHIC REON. OF METHYLENE BLUE IS IRREVERSIBLE AND GOES VIA A SEMIQUINONE, WHICH IS A 1 ELECTRON PROCESS NO MATTER WHAT THE ULTIMATE FATE OF THE SEMIQUINONE.
FACILITY: CHERNOVITS. GOS. UNIV., CHERNOVTSY, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE IMMEDIATE AND REMOTE RESULTS OF VAGOTOMY IN DUODENAL PEPTIC
ULCER -U-
AUTHOR--(04)-UTESHEV, N.S., PAKHOMOVA, G.V., BYCHKOVA, T.I., SEMENOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 6, PP 35-39
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DUODENUM, SURGERY, NERVE TISSUE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605005/001 STEP NO--UR/0531/70/000/006/0035/0039
CIRC ACCESSION NO--AP0139710

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE N. V. SKLIFOSOVOSKY INSTITUTE 75 PATIENTS WITH COMPLICATIONS OF DUODENAL PEPTIC ULCERS WERE SUBJECTED TO VAGOTOMY AND ANTRECTOMY. VAGOTOMY WAS PERFORMED SUBDIAPHRAGMATICALLY. SECTION OF THE VAGUS NERVES IN THE IMMEDIATE VICINITY TO THE LESSER CURVATURE OF THE STOMACH WAS ACHIEVED BY PRESERVATION OF HEPATIC AND INTESTINAL BRANCHES OF THE VAGUS NERVES. THE EXPERIENCE OF TREATMENT HAS SHOWN THAT THE PATIENTS REQUIRE FOR TWO-THREE POSTOPERATIVE DAYS CONSTANT ASPIRATION FROM THE STOMACH FOR THE RESTORATION OF ITS TONE. OUT OF 75 PATIENTS IN 3 THERE WAS OBSTRUCTION OF THE ANASTOMOSIS FOR 14 DAYS, WHICH NORMALIZED UNDER THE INFLUENCE OF CONSERVATIVE MEASURES. THE REMOTE RESULTS WERE STUDIED IN 40 PATIENTS. AN ANALYSIS OF THESE DATA HAS SHOWN THAT AT PERIODS FROM 3 MONTHS TO 4 YEARS AFTER VAGOTOMY WITH ANTRECTOMY THERE OCCUR NO PRONOUNCED CHANGES IN THE FUNCTION OF THE LIVER, PANCREAS AND SMALL INTESTINE. A PERSISTENT ACHYLIA WAS NOTED AFTER THE EXAMINATION OF THE GASTRIC SECRETION. THERE WERE SEEN NOT SIGNS OF THE DUMPING SYNDROME, THE DEVELOPMENT OF PEPTIC ULCERS OR DIARRHEA IN THE GROUP OF PATIENTS.

FACILITY: 1-YA KHIRURGICHESKAYA KLINIKA POMOSHCHI IMENI N. V. SKLIFOSOVSKOGO, MOSKVA.

UNCLASSIFIED

172 048 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DISTRIBUTION OF POLYENIC SEQUENCES DURING POLY(VINYL CHLORIDE)
THERMAL DEGRADATION -U-
AUTHOR-(03)-MINSKER, K.S., KRATS, E.O., PAKHOMOVA, I.K.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 483-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS
TOPIC TAGS--POLYVINYL CHLORIDE, THERMAL DEGRADATION, OXIDATIVE
DEGRADATION, CHEMICAL STABILIZER, LEAD COMPOUND, PHENOL, POLYMER
STRUCTURE, LASER RADIATION, POLYCARBONATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1191 STEP NO--UR/0459/70/012/003/0483/0488
CIRC ACCESSION NO--AP0116656
UNCLASSIFIED

2/2 048

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF SHORT CONJUGATED SEGMENTS INCREASED DURING THE OXIDATIVE THERMAL DEGRADATION OF TITLE POLYMER (I) AT 175DEGREES. THE DISTRIBUTION AND CONTENT OF POLYENE SEQUENCES IN I DEGRADED IN THE AIR AND STABILIZED WITH PBO.PBSO SUB4, OR ANTIOXIDANTS (E.G., 4,METHYL,2,6,DI,TERT,BUTYLPHENOL, BIS,(5,METHYL,3,TERT,BUTYL, 2,HYDROXYPHENYL)METHANE, OR BISRENE, AND POLYCARBONATES, WERE STUDIED. THE RELATION OF MICROCRACKS TO THE POLYMER MICROSTRUCTURE AND THE LASER IRRADN. INDUCED DEVELOPMENT OF DESTRUCTIVE CRACKS FROM THE MICROCRACKS ARE DISCUSSED.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--AGRICULTURAL TECHNOLOGY AGAINST ROOT ROT AND SPRING WHEAT PESTS -U-
AUTHOR--(02)-PAKHOMOVA, I.S., SURKOV, V.YA. *P*
COUNTRY OF INFO--USSR
SOURCE--ZASHCHITA RASTENIY, 1970, NR 3, P 20
DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE
TOPIC TAGS--WHEAT, PLANT DISEASE, AGRICULTURE R AND D

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605048/F03 STEP NO--UR/0433/70/000/003/0020/0020
CIRC ACCESSION NO--AP0143323

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 006

CIRC ACCESSION NO--AP0143323

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. METHODS OF AGRICULTURAL TECHNOLOGY USED TO COMBAT ROOT ROT OF SPRING WHEAT (CAUSED BY HELMINTHOSPORIUM SATIVUM) AND SPRING WHEAT PESTS WERE STUDIED IN 1967-1968 IN KRASNOPARTIZANSKIY DISTRICT (NEAR SARATOV) IN FIELDS PLANTED WITH THE MELANOPUS-26 VARIETY OF SPRING WHEAT. TESTS WERE CONDUCTED IN ONE MODERATELY ARID YEAR (1967) AND ONE WET YEAR (1968) IN A CHERNOZEM AREA. TRIALS OF THREE TYPES OF AUTUMN PLOWING SHOWED THAT THE GREATEST NUMBER OF DAMAGED PLANTS WERE OBSERVED WHEN STEMS REMAINED ON THE SURFACE, PROMOTING INFECTION. CORN WAS THE BEST PRECURSOR CROP. COMBINED WITH DEEP PLOWING, USE OF CORN PROMOTES WHEAT DEVELOPMENT, INCREASING RESISTANCE OF PLANTS TO ROOT ROT. THE NUMBER OF GRAIN BEETLES AND WHEAT THRIPS PER M² DECREASED FROM 1967 TO 1968, WHEN WHEAT FOLLOWED CORN, APPARENTLY BECAUSE FREQUENT CULTIVATION DESTROYS LARVAE. FACILITY: SARATOVSKIY SEL'SKOGO KHOZYAYSTVA INSTITUT, SARATOV AGRICULTURAL INSTITUTE.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF HEAT TREATMENT ON THE STRUCTURE OF HIGHLY ORIENTED KAPRON
SPUN THREADS -U-
AUTHOR--(05)-NOSOV, M.P., MIKHLINA, V.V., PAKHOMOVA, L.N., OLEYNIK, V.G.,
BYCHKOVSKIY, N.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (1), 18-21
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAPRONE, IR SPECTRUM, MOLECULAR STRUCTURE, THERMAL EFFECT,
MACROMOLECULE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1820 STEP NO--UR/0183/70/000/001/0018/0021
CIRC ACCESSION NO--AP0100394

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0100394
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF HEAT TREATED
HIGHLY ORIENTED KAPRON (I) YARN (93.4

USSR

UDC 612.47+612.743

ZIMKIN, N. V., and PAKHOMOVA, T. G., Chair of Physiology, Leningrad Institute of Physical Culture, and Chair of Anatomy and Physiology, Kharkov Institute of Physical Culture

"Interrelation Between Hardness, Viscosity, Strength, and Bioelectrical Activity of Muscles in Man"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, 1972, pp 1,099-1,108

Abstract: Phasic muscles are less hard and more viscous than postural muscles. Muscles physically trained, especially in heavy work, display, at rest and in work, a greater hardness and a lower viscosity than untrained muscles. During sleep, muscle hardness and integrated electrical activity decrease, while viscosity increases. Maximum muscle strength is smaller immediately after awakening than prior to sleep. During heating, muscle hardness, viscosity, and strength increase at first. However, when skin temperature exceeds 38°C, viscosity increases while strength decreases. In ischemia and low arterial oxygenation, viscosity and hardness increase, while maximum strength decreases. When the muscle contracts, its integrated electrical activity is reduced in low arterial oxygenation but increased in ischemia. During static and dynamic work, both hardness and viscosity increase. During recovery, the

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USSR

ZIMKIN, N. V., and PAKHOMOVA, T. G., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, 1972, pp 1,099-1,108

parameters return to normal at different speeds. It is suggested that muscle hardness, viscosity, and maximum strength are determined by physical and chemical alterations taking place in the muscle tissue and by impulses arriving via motoneurons and possibly also via sympathetic nerve fibers.

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Organ and Tissue Transplantation

USSR

UDC 612.17+612.2157-089.843

PRIYMAK, A. A., GERASIMENKO, N. I., ANICHKOV, M. N., VIGDORCHIK, I. V.,
AVERBAKH, M. M., DOBKIN, V. G., DEMIDOV, B. S., VIGDORCHIK, S. I., PAKHOMOVA,
Z. I., PETUKHOVA, I. V., VAKSMAN, B. M., GALAYEVA, V. N., and KOZLOV, P. D.

"Use of an Isolated Heart-Lung Preparation in Experimental Transplant Surgery"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 22-23

Abstract: Brief preliminary report on the use of an isolated heart-lung preparation with a working heart in more than 200 experiments on dogs, swine, calves, and sheep. The isolated heart-lung preparation is connected by special cannulas to the peripheral vessels of the recipient's systemic circulation. The isolated lungs inspire an air mixture under hyperventilation conditions. The parameters of electrical activity of the donor's and recipient's hearts, recipient's brain, hemodynamics, biochemical changes in blood, external respiratory function, blood gases, morphology of the tissues of the isolated heart-lung preparation (in various stages of survival) and of the recipient (following biological oxygenation) are investigated. The experiments showed that the physically stabilized heart-lung preparation when used as a biological oxygenator remains viable and ensures good lung and heart function for 10 to 15 hours. It is capable of adjusting automatically to the recipient's circulation and without traumatizing the formed elements

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USSR

PRIYMAK, A. A., et al., Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 22-23

of the blood maintains the necessary blood flow rate.

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USSR

UDC: 620.175-462

PAKHOTIN, K. K. and SEDOKOV, L. M.

"Method of Determining the True Stresses in Twisted Thick-Walled Tubes"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 102-104

Abstract: An equation derived by Noritsyn and Kislyy for computing the tangential stresses on hollow rods undergoing mechanical twisting tests is cited, and a method of experimentally checking the two assumptions on which the equation is based is proposed. The assumptions are, first, that the plane transverse cross sections remain flat up until destruction occurs, and second, that the straight radii in the transverse cross sections remain rectilinear. A curve showing the results of these tests and proving the correctness of the assumptions is plotted. Also given is a curve showing the results of twisting thick-walled tube specimens of 2Kh13 steel. The authors are associated with the Tomsk Polytechnical Institute.

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USSR

UDC 539.4

PAKHOTIN, K. K., and SEDOKOV, L. M., Tomsk

"Criteria for Rupture of Hardening Materials"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 46-48.

Abstract: All classical and recent theories of strength used for plastic materials fail to consider the behavior of the materials during the course of plastic deformation preceding rupture. However, the processes of plastic form-alteration in various materials differ significantly in their instantaneous and final parameters, which cannot help influencing the value and relationships of rupture stresses. This article suggests a rupture criterion which considers hardening of the material during the course of plastic deformation, which is evaluated from the stress-strain diagram. The calculated value of resistance to plastic deformation and rupture in shear is compared to the actual resistance of plastic twisting of solid and hollow circular rods, as well as the resistance to cutting, when various degrees of plastic deformation have been performed right up to rupture.

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NUCLEAR SCI. ABST. 2-70

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6679 (SLAC-Trans-105) PRELIMINARY RESULTS OF A STUDY OF THE ρ -MESON RESONANCE USING COLLIDING ELECTRON-POSITRON BEAMS. Balakin, V. E.; Budker, G. I.; Korshunov, Yu. V.; Mikhaylov, S. I.; Pakhtusova, E. V.; Pestov, Yu. N.; Sidorov, V. A.; Skrimshil, A. N.; Tumaikun, G. I.; Khabakhpashev, A. G. (Akademiya Nauk SSSR, Novosibirsk, Institut Yadernoi Fiziki). Translated by T. Watt for Stanford Linear Accelerator Center, Calif., from Russian Preprint No. 327. 12p. Dep. CFSTI.

The results are reported of a preliminary analysis of approximately 100,000 photographs from a spark-chamber study of the ρ -meson, using the electron-positron storage ring VEPP-2. The measurements were carried out for nine energy values between 508 and 514 MeV. Two types of events were analyzed: elastic electron-positron scattering and charged kaon pair production. A least-squares fit of the results to the Breit-Wigner curve yielded the following values for the resonance parameters: $\Gamma = 4.1 \pm 0.5$ MeV and $\sigma_0 = 2.3 \pm 0.3 \mu\text{b}$. The total resonance cross section for the formation of the ρ -meson was found to be $\sigma_{\rho} = 4.2 \pm 0.6 \mu\text{b}$. (L.B.S.)

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USSR

BALAKIN, V. YE., BUKIN, A. D., KURDADZE, L. M., ONUCHIN, A. P., PAKHTUSOVA, YE. V., SEREDNYAKOV, S. I., SIDOROV, V. A., and KHABAZHPASHEV, A. G., Institute of Nuclear Physics of the Siberian Department of the Academy of Sciences USSR

"Observation of Double e^+e^- -Pair Production"

Moscow, Yadernaya Fizika, Vol 16, No 4, 1972, pp 729-733

Abstract: The article describes results of the first experiments (in 1969 and 1970) on the observation of the process of the double pair production of the electron-positron pairs $e^+e^- \rightarrow e^+e^- + e^+e^-$ on a VEPP-2 positron-electron accelerator ring. Papers on this work were presented in 1971 at international conferences in Amsterdam and Cornell. The cross-section of the process for large angles of emission for the produced particles was measured. The experimental results were found to be in agreement with the theoretical calculations of V. N. BAYYER and V. S. FADIN.

The authors thank V. N. BAYYER and V. S. FADIN for discussions.

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USSR

DEC 611.791.019

TIMOFEEV, M. M., ZUBCHENKO, A. S., KOLYADA, A. A., PARNUTIDZE, V. I., and ROMANENCHUK,

"Cold Crack Formation in Ferrite Steel Welding"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 70, pp 9-12

Abstract: Several types of steel are mentioned as being suitable for structures requiring high anti-corrosion and anti-thermal properties. These include the OKh23S2Yu and Kh25Yu5 types, the first of which is known in foreign countries under the name of Siskromal-12. The defect of these steels is that they are poorly resistant to cold cracks under welding. The purpose of this paper is to investigate the causes of this defect and to study the mechanism of formation of the cracks. Specimens used for the research were these two types of steel, both of which were smelted in open induction furnaces under slag. The OKh23S2Yu was hammered after casting into sheets measuring 12 x 120 x 500 mm while the Kh25Yu5 specimens were studied in cast form. A table of the chemical compositions of both is given. The authors find a dependence between the temperature interval of the crack formation in welds of the two steels and the temperature transition of the steels to the brittle state. They propose

USSR

TIMOFEEV, M. M., et al, Avtomaticheskaya Svarka, No 10, Oct 76, pp 9-12

a method of welding ferrite steel involving the use of preliminary and accompanying heating to a temperature exceeding the temperature of the transition to the brittle state near the welded seam. Tempering directly after the welding makes it possible to remove the remaining stresses which cause the formation of the cracks. They assert also that the critical temperature of the transition to the brittle state can serve as a criterion of the weldability of ferrite steels.

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USSR

UDC 621.319.53:621.382.2.072.1:546.28:621.384.6

BAYANOV, B. F., IL'IN, A. V., PAKIN, V. N., PANOV, A. P., SUL'VESTROV, G. I.

"Generator of Current Pulses with an Amplitude of 10^6 and a Stability of $\pm 10^{-3}$ with a Repetition Frequency of 2 Hz"

Tr. Vses. soveshchaniya po uskoritelyam zaryazhen. chastits, 1968. T.1 (Works of an All-Union Conference on Charged Particle Accelerators, 1968. Vol 1), Moscow, 1970, pp 283-286 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A285)

Translation: This paper considers a generator created at the Institute of Nuclear Physics of the Siberian Branch of the Academy of Sciences, USSR, which at an inductive load of 0.1 microhenry guarantees a unipolar current pulse of sinusoidal form with a duration with respect to the starting point of 1.2 microsecond, the amplitude of which is equal to 10^6 a and the stability to plus or minus 0.1 percent. The generator involves stored capacitance which is charged via a controlled rectifier into the primary winding of a transformer. For regeneration of energy, a recharge of the capacitance is performed via a special recharge choke coil and recharge diodes. As a second variation of the commutator, a gas-discharge rectifier was developed, which is controlled with the help of a pulse of the magnetic field. There are two references. V. I.

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USSR

UDC 51:621.391

PROTOPOPOV, O. G., PAKIN, Yu. P., BARSAGAYEVA, S. V.

"Use of a Group Code for Detection and Correction of Errors During Transmission of Messages"

Vopr. Razrab. I Vendrenaya Sredstv. Vychisl. Tekhn., [Problems of Development and Introduction of Computer Equipment--Collection of Works], Tbilisi, 1970, pp 88-93, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. SV479 by Yu. Pyatoshin).

Translation: Formulas are concluded for estimation of the effectiveness of certain correcting codes in the case of transmission of information with interrogation through a channel without memory using a code for correction and detection of the error.

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USSR

UDC 591.1.15

GOLOVACH, V. M. and PAKOSH, V. G.

"Effect of Ultraviolet Irradiation on the Content of Phosphorus Compounds in Chick Tissues"

Fiziologiya i biokhimiya sil's'kogospod. tvarin. Resp. mizhvid. temat. nauk. zb. (Physiology and Biochemistry of Farm Animals. Republic Interdepartmental Thematic Scientific Conference), 1972, No 20, 25-26 (from RZh-Biologicheskaya Khimiya, No 24, Dec 72, Abstract No 24 F1452, in Ukrainian)

Translation: The authors studied the effect of ultraviolet irradiation on some phosphorus compounds in 10-day-old chicks. The animals were irradiated with a PRK-2 lamp at a dose of 38 mcr/hour/m². The objects investigated were liver, thoracic and femoral muscle tissues. The particular dose of UV radiation was found to induce definite changes in the phosphorus content of the nucleic acids, RNA in particular. These changes were more pronounced in liver and femoral muscle tissues than in thoracic muscle tissues.

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USSR

UDC 621.165+621.438.018

OGLOBLIN, G. A., PRUTKOVSKIY, Ye. N., PAKSHIN, A. V., and OZEROV, V. I.

"Investigation of the Efficiency of Steam-Gas Plants With Different Modes of Discharging Gases Into the Boiler"

Tr. Sev.-Zap. Zaoch. Politekhn. In-ta [Works of the Northwestern Correspondence Polytechnic Institute], No 19, 1972, pp 36-40 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49.28)

Translation: The suggested method simplifies the analysis of thermal efficiency of steam-gas plants (SGP) with discharging under conditions of partial loads. The efficiency reduction on load reduction of SGP becomes less intensive with increase of the gas temperature t_3 before the gas turbine, but at $t_3 > 1200^\circ\text{C}$ the load reduction effects an efficiency increase of SGP. The shielding of the combustion chamber of the gas stage by steam superheating heat surfaces increases the efficiency of SGP and increases it the more the lower the load of SGP. Two illustr., six biblio. refs.

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1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF BULK DYEING ON THE PROPERTIES OF A KAPRON FIBER -U-
AUTHOR--(03)-PEKARSKIY, M.SH., PAKSHVER, A.B., BELENKIY, L.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (2), 74-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--DYE, CAPRONE, PIGMENT, TENSILE STRENGTH, FATIGUE STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0103 STEP NO--UR/0183/70/000/002/0074/0076
CIRC ACCESSION NO--AP0132396
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF PIGMENTS (SUCH AS MINERAL PINK, MINERAL YELLOW, PHTHALOCYANINE BLUE, NYLOPHIL BLUE GL, AND CHANNEL BLACK) AND KAPROSOLS (E.G., BROWN 4K, RED K, AND SCARLET S) ON THE PROPERTIES OF KAPRON (I) FIBERS WERE STUDIED. THE DYES AFFECTED THE TENSILE STRENGTH, FATIGUE STRENGTH, AND PHOTOSTABILITY OF I FIBERS.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE CHARACTERISTICS OF JAUNDICE CAUSED BY AMINAZINE CHLORPROMAZINE
-U-
AUTHOR--(04)--SINAYKO, G.A., PAKTORIS, YE.A., KUTCHAK, S.N., SHUMKINA, O.B.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 45-52
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--JAUNDICE,--CHLGRPROMAZINE
CENTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1887 STEP NO--UR/0497/70/048/006/0042/0052
CIRC ACCESSION NO--AP0129244
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINAZINE (CHLORPROMAZINE) INDUCED JAUNDICE WAS STUDIED IN 31 CASES. THE PAPER GIVES A CHARACTERISTICS OF ITS CLINICAL PICTURE, THE RESULTS OF BIOCHEMICAL AND MORPHOLOGICAL (ILLUMINATION AND ELECTRON MICROSCOPY) INVESTIGATIONS. AMINAZINE JAUNDICE DEVELOPS ACCORDING TO THE FORM OF INTRAHEPATIC CHOLESTASIS ACCOMPANIED BY ITCHING, INCREASED ACTIVITY OF ALKALINE PHOSPHATASE AND THE BLOOD SERUM CHOLESTEROL LEVEL. THE ACTIVITY OF FRUCTOSE MONO AND FRUCTOSE DIPHOSPHATE ALDOLASES, ASPARTATE AND ALANINE AMINOTRANSFERASES AUGMENT INSIGNIFICANTLY OR DO NOT CHANGE. PRECIPITATION TESTS, MERCURIC CHLORIDE AND THYMOL, REMAIN NORMAL. THERE IS A MODERATE OR SIGNIFICANT RISE OF THE LEUKOCYTE AND EOSINOPHIL COUNT AND ACCELERATION OF ESR. UPON MORPHOLOGICAL STUDY THERE IS OBSERVED AN INTRAHEPATIC CHOLESTASIS WITHOUT DISORDER OF THE LIVER STRUCTURE AND OBVIOUS CHANGES OF ITS PARENCHYMA AND PORTAL FIELDS. AS A RULE, AMINAZINE INDUCED JAUNDICE OCCURS ON THE 2ND-5TH WEEK FROM THE ADMINISTRATION OF THE PREPARATION AND DOES NOT APPEAR IN PERSONS PROTRACTEDLY USING THE DRUG. CLINICAL DATA, ALONG WITH THE RESULTS OF LABORATORY AND MORPHOLOGICAL INVESTIGATIONS, MAY SERVE AS A RELIABLE BASIS FOR THE DIAGNOSIS OF AMINAZINE JAUNDICE AND ITS DIFFERENTIATION FROM VIRAL HEPATITIS (BOTKIN'S DISEASE). FACILITY: KLINICHESKIY OTDEL INSTITUTA VIRUSOLOGII IM IVANOVSKOGO AMN SSSR NA BAZE GORODSKOY KLINICHESKOY INFECTSIONNOY BOL'NITSY NO 82, MOSKVA.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ISOASTROGALIN, A FLAVONOID GLUCOSIDE FROM GOSSYPIMUM HIRSUTUM,
COTTON, FLOWERS -U-
AUTHOR--(02)-PAKUDINA, Z.P., SADYKOV, A.S.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 27-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PROCESSED PLANT PRODUCT, GLUCOSIDE, KETONE, FLANONOID
COMPOUND, CHEMICAL IDENTIFICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----F070/605002/C12 STEP NO--UR/0393/70/006/001/0027/0029
CIRC ACCESSION NO---A20139443
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139443

ABSTRACT/EXTRACT--(U) GP-0-

245-6DEGREES (PENTAACETATE

3, ALPHA, D, GLUCOFURANOSIDE.

TEKHNOL. KHLOP. TSELYUL.,

ABSTRACT. THE TITLE GLYCOSIDE, M.
M. 180-1DEGREES), WAS IDENTIFIED AS COMPHEROL
FACILITY: NAUGH.-ISSLED. INST. KHIM.
TASHKENT, USSR.

UNCLASSIFIED

PAKUL, D. L.

CHEMISTRY

3685 61577 21 3-27 74

UTILIZATION OF OZONE IN TREATING INDUSTRIAL SEWAGE

[Article by D.P. Kravtsov, D. L. Pakul, and T. V. Kizilova: "The Use of Ozone in Treating Industrial Sewage", Moscow, Khimicheskaya Promyshlennost', January 1974, pp 21-30]

The ozonation method is lately being used more and more often in most local organic compounds oxidation potential (2.07 v), readily oxidizes, however, prevents wide-scale application of this method.

In this connection, the possibility of intensifying the process and simplifying the ozonation method in industry.

Since oxidation of contaminants by ozone occurs mainly in a diffusion field at the discontinuity of the phase, work on intensifying the process has been directed toward finding ways to improve the contact between the ozone-air mixture and the solution being treated [1].

Another means of making possible a sharp acceleration in the oxidation of contaminants by ozone is the use of catalytic agents in the oxidation process. Earlier studies showed that cuprous salts [2] and silica gel [3], for example, might serve as catalysts in this process. It should be noted that the choice of catalysts is of an empirical nature. This is caused by the fact that oxidation of organic compounds by ozone in weak solutions has been insufficiently studied.

Our study was made on the oxidation by ozone of a certain class of organic compounds in weak solutions. Aliphatic alcohols were used as test compounds, since they are quite often present in the sewage of enterprises of the chemical industry, and in addition, can be formed as intermediate products during the oxidation of certain organic compounds by ozone [4].

The experiments were carried out in glass columns, 40 and 60 cm in diameter, and 400 mm high. The ozone-air mixture, released from nitric oxides (for this purpose the mixture was passed through an absorbent with a weak alkaline solution), entered the column through a No 2 Snot filter

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STROGANOV, A. I., PYL'NEV, Yu. A., CHERNYSHEV, E. Ya., KEYS, N. V., PAKULEVA, V. S., DONETS, I. D., KHOLODOV, Yu. A., and GERMELIN, F. A., Chelyabinsk Polytechnical Institute; Chelyabinsk Metallurgical Plant

"Tungsten Losses in the Production of High-Speed Steel"

Moscow, Metallurg, No 1, Jan 71, pp 21-23

Abstract: Data are presented on seven melts of R18, R12, and R6M3 high-speed steels, an analysis is made of tungsten electric steelmelting and forge conversion processes, and methods are presented for utilizing scrap of tungsten-bearing steels. From the study the following conclusions can be made: as the tungsten content in the steel is increased, its assimilation decreases. A decrease in the proportion of tungsten through the ferro-alloys as well as a decrease in the consumption of oxygen for blowing facilitate a more complete assimilation of tungsten by the metal. A substantial portion of tungsten is lost with the scrap and reguli in the slag (0.34%), the emery dust, and scale during forging. A thorough extraction of tungsten from slag and scale is suggested. Means for reducing tungsten losses in the process of heating castings and ingots in the furnaces include

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STROGANOV, A. I., et al, Metallurg, No 1, Jan 71, pp 21-23

a nonoxidizing atmosphere, more rapid heating, and application of a protective coating to ingots prior to heating. To decrease decarburization and scale formation, the Chelyabinsk Metallurgical Plant has recently been using coatings comprising refractory clay (20%), M40 carborundum powder (6%), fine graphite (6%), commercial borax (3%), and liquid glass (65%).

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Construction **P**

USSR

UDC 624.131.43:531.5 **2**

CHERKASOV, I. I., MIKHEEV, V. V., PETRUKHIN, V. P., PAKULIN, V. A., SNARSKII, A.S., and SHVAREV, V. V.

"Effect of Gravity on Mechanical Properties of Soils"

Moscow, Osnovaniya, fundamenty i mekhanika gruntov. No 1, 1970, pp 14-18

Abstract: Results are given of an experimental investigation of the effect of gravity on mechanical properties of soils, conducted in an aircraft and in a centrifuge. The first series of experiments were conducted in a specially equipped TU-104 aircraft flying along a specific trajectory. Along a section of this trajectory the soils were subjected to an acceleration $a = 1.62\text{m/sec}^2$ for 8 seconds, i.e. $1/6$ g at ground level. The second series were conducted on a centrifuge, on which soils were subjected to 55.1, 98.1 and 196.2m/sec^2 acceleration, i.e. 5.6, 10, and 20 g. Both series of tests contained controlled tests in motionless aircraft and centrifuge. The overload coefficient $h = a/g$ varied from 0.165 to 20. Experimental setups and techniques for both the aircraft and centrifuge tests are described in detail. A photograph of the airborne equipment and a schematic drawing of the centrifuge are presented. Four types of soils were tested, whose physico-mechanical properties are given in a table. They are: 1) silica sand;

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